



DEPARTMENT OF THE ARMY
PHILADELPHIA DISTRICT, CORPS OF ENGINEERS
CUSTOM HOUSE-2 D & CHESTNUT STREETS
PHILADELPHIA, PENNSYLVANIA 19106

IN REPLY REFER TO

NAPOP-E

17 JAN 1980

Mr. Joseph A. Galda, Chief
Pennsylvania Branch
Water Division, EPA Region III
Curtis Building, 6th & Walnut Sts.
Philadelphia, Pennsylvania 19106

Dear Mr. Galda:

Attached herewith is an Interim Inspection Report for the Hamilton Township
Municipal Authority; Grant No. C-420916-01.

Sincerely,

RICHARD F. BECKER
Chief, E.P.A. Branch
U. S. Army Corps of Engineers

1 Incl
As stated

Copy Furnished:
Mr. Brij M. Garg, DER



C.O.E. Interim Inspection

~~3-12-79~~

2001 2002 2003 2004 2005

NAPOP-E

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ENVIRONMENTAL PROTECTION AGENCY
REGION III
INTERIM CONSTRUCTION INSPECTION REPORT

Name of Facility Hamilton Township Sanitary Sewerage System Report Number 4
Location R. D. #4, Chambersburg, PA 17201 Grant Number C-420916-01
Grant Amount \$4,841,020.00

Section I. General

1. Applicant Hamilton Township Municipal Authority
2. Brief Project Description Construct gravity pipelines, force mains, and five pumping stations to service approximately 1,500 EDU in Hamilton Township.

3. Date Visited 5 December 1979 Date of Visit 3 September 79

4. Status of Grant Schedule: Date Construction Start 10 January 1979

Original Completion Date 3 July 1980
Revised Completion Date 11 July 1980 (Eight Day Time Extension as a result of Change Orders.)

Scheduled percent this date 75% thru 31 October 1979

Actual percent this date 71% thru 31 October 1979

Number of EPA Payment Requests submitted and total amount (9a) \$3,170,425.00

Number of payments received by applicant and total amount (9) \$2,924,425.00

Actual percent complete this date by EPA payments Received 60%

5. This inspection performed by James A. Smith, Jr., P.E., U.S. Army, Corps of Engrs, Philadelphia District, Chambersburg Area Office, Telephone (717) 264-8012

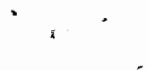
6. Consultant Arrowood, Inc., Post Office Box 433, Chambersburg, PA 17201

7. Persons Contacted:

<u>Name</u>	<u>Title</u>	<u>Employer</u>	<u>Telephone</u>
<u>Dennis Black, Resident Engineer, Arrowood, Inc.</u>			<u>(717) 264-4540</u>
<u>W. L. Arrowood, President, Arrowood, Inc.</u>			<u>(717) 263-8794</u>
<u>Laurie Greene, Accountant, Arrowood, Inc.</u>			<u>(717) 263-8794</u>
<u>Sam Garnes, Estimator, Arrowood, Inc.</u>			<u>(717) 263-8794</u>
<u>George Gerelis, Manager, Hamilton Township Municipal Authority</u>			<u>(717) 264-2946</u>

EP FORM 1814 (TEMPORARY)
JUN 79

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Section II. Administration Management

1. Daily log of construction, who keeps, is it acceptable?

Each inspector keeps a daily log, Resident Engineer maintains a master diary
(hard bound books). Resident Engineer and inspector's logs were accurate and
up-to-date.

2. Method of recording construction deficiencies and method of recording correction thereof. (Show complete sequences.)

Deficiencies are generally recorded on the quantity sheets and inspector's
field books. Corrections were reported as being recorded in the field books,
also. Mr. Black reported that Contractors' response to date has been good.

3. How is work approved prior to payment? By whom? (for unit price items)

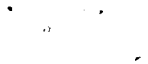
Mr. Arrowood reports that the Resident Engineer makes his own payment estimate,
compares this to the contractor's estimate and finalizes this with con-
tractor. Mr. Arrowood then submits estimate to Authority for payment.
Resident Engineer and Inspectors measure quantities for unit price items on
a daily basis.

4. How is received equipment inspected and approved prior to payment?

Equipment and materials are checked by inspectors prior to installation and
payment. Stored materials (Contract 5 only) paid at 90% of invoiced value.
No stored materials payment made for Contracts 1 thru 4. (See Attachment No.
1 for policy.)

5. Change Orders. How many - how estimated and approved prior to commencing work?

8 change orders have been approved by the Authority. Change orders for
unit price items are estimated by the Consultant, recommended to the
Authority by Mr. Arrowood and approved by the Authority. Non-unit price
items are estimated by Consultant and cost negotiated with contractor.



6. Change Order Log

Grantee: Hamilton Township Municipal Auth.

Gravity Lines and Force Main

Grant No.: C-420916-01

Change Order No.	Description	Date Initiated	Initiated By	EPA Approval Required	Approved by Grantee	Date of Approval Grantee	Approval Amount	New Contract Total	Time Extension Calendar Days	New Completion Date	Contract Documents Adjusted	New Eligible Items Total	New Ineligible Items Total
1	Temp. conn. to Ex. Boro. System near Int. Hood & Commerce	12/2/78	Auth	Yes	Yes	5/8/79	\$42,881.00	\$5,125,645.00	+3	7/06/80	Yes	\$4,668,411.00	\$457,233.00
2	Alignment Change at Int. N. Franklin St. ext. & Commerce St.	2/28/79	Auth	Yes	Yes	5/8/79	\$385.00	\$5,125,259.00	--	7/06/80	Yes	\$4,668,026.00	\$457,233.00
3	Alignment Change along LR 28006 & Property Owners Kaiser and Shetter	4/11/79	Auth	Yes	Yes	5/8/79	\$2,142.00	\$5,123,117.00	--	7/06/80	Yes	\$4,665,884.00	\$457,233.00
8	Alignment Change to Follow street in Carl Flohr Development	4/20/79	Auth	Yes	Yes	5/8/79	\$1,558.00	\$4,121,559.00	--	7/06/80	Yes	\$4,664,326.00	\$457,233.00
4	Alignment Change to miss storm sewer along Route 30	5/4/79	Auth	Yes	Yes	7/11/79	\$460.00	\$4,122,019.00	+1	7/07/80	Yes	\$4,665,081.00	\$456,938.00
5	Sewer Extension for New Dwelling off T-532	9/24/79	Auth	Yes	Yes	10/10/79	\$3,570.00	\$4,125,589.00	+1	7/08/80	*	\$4,667,966.00	\$457,583.00
6	Sewer Extension on Hilltop Drive	10/5/79	Auth	Yes	Yes	10/10/79	\$1,792.00	\$4,127,382.00	+1	7/09/80	*	\$4,671,743.00	\$455,639.00
7	Sewer Extension for New Dwelling on James Street	10/8/79	Auth	Yes	Yes	10/10/79	\$8,802.00	\$4,136,184.00	+1	7/10/80	*	\$4,680,039.00	\$456,145.00
* No - Awaiting approval by Federal Home Administration.													

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Gravity Lines and Force Mains

Grant No.: C-420916-01

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7. Construction inspection

Supervising Inspector & Employer Dennis Black

Inspectors & Employers Lisa Hoover (Clerk), K. Shives, T. Crouse,
K. Breighner (T. Nickles - paid by authority).

Describe chain of command and efficiency of operation.

Inspectors report to Mr. Black, Resident Engineer, who reports to Mr. Arrowood,
President. Mr. Arrowood in turn reports to the Authority.

8. Treatment plant operation during construction. New N/A Addition
If addition or modification, obtain past and present operational records.
Include copies of permit data or complete the below:

Permit No. Not Applicable

Permit Parameters	Prior to Construction		During Construction	
	(Date <u>Infl</u>)	(Date <u>Effl</u>)	(Date <u>Infl</u>)	(Date <u>Effl</u>)

NOT APPLICABLE

9. Plant or Unit Process Bypassing During Construction Not Applicable





Section III. Interference to job (Strikes, equipment, deliveries, etc., and proposed resolution).

Mr. Black stated pump stations (pre-fab units) have been delayed in shipment until February 1980. This should not affect completion of project within contract time.

Section IV. Permit Program

1. Was a Section 404 or Section 404/10 permit issued? Yes _____ No X
2. If yes, does construction appear to be in compliance with the plans and conditions of the permit?
3. If no, is any work being performed or proposed in any waterway, wetlands, etc.? Yes X (give details) No _____

Four small stream crossings are in contract and covered by Nationwide Blanket Permit. Construction has been completed on all crossings.

Section V. Quality of Construction

1. Test Requirements: (Repeat below for additional contracts.)

Contract: 1 thru 4 - Gravity and Force Mains

	Spec. Requirements	Test Result	Final Resolution
Soil Compaction	90% of max. dry density by AASHTO Method T-99 Maximum of 50 tests for Contracts 1 thru 4, plus alternates.	No tests since last Interim: Previous Tests Avg. 92.9% Compaction	Passed.
Concrete Cylinder	Class A (Structural) 3,000 psi min Class B (Non-Struc.) 2,500 psi min NOTE: 28-day break not received at last Interim for Class B Concrete; has been received = 3,650 avg.	No test run since last interim.	---
Equipment	Performance curves for pumps have been received (Spec Sec. PS-M&E-11-7.1) and installation approval may be Engr.	Performance tests to be run after installation.	
Sewer Line Grades	Branches and centerline of manholes checked by Contractor Cut sheets submitted to and checked by Inspectors, who also	No errors have been encountered by follow-up surveys on inverts. Alignment checked prior to backfill.	
Gravity Lines	Low Pressure Air Test	2 failed to date. Logs are up-to-date & accurate.	Passed
Pressure Lines	Hydrostatic water test @ 150 psi for two hours.	None tested to date.	----
Manholes	Infiltration/Exfiltration Tests as needed.	Spot checked for infiltration. Repaired where needed.	Passed.
Certifications for	pipe and pre-cast manholes on file at field office.		



Contract: 5 - Pumping Stations			
	Spec. Requirement	Test Result	Final Resolution
Soil Compaction	None, except for subgrade replaced with fill, which is compacted to 90% (AASHTO T-99).		-----
		NO	
Concrete Cylinder	Class A (Structural) 3,000 psi min.		-----
		WORK	
Equipment	Operational Tests at factory and after installation of pumps and generators.		-----
		PERFORMED	
Sewer Line Grades	Checked by Inspectors		-----
		TO	
Gravity Lines -	Low Pressure Air Test		-----
Pressure Lines -	Two hr. Hydrostatic 150 psi Test		-----
Manholes -	Exfiltration/Infiltration as needed.	DATE	-----

Contract:			
	Spec Requirement	Test Result	Final Resolution
Soil Compaction			
Concrete Cylinder			
Equipment			
Sewer Line Grades			
Other			



11-1-11

2. Appearance of Construction (By Contract)

Concrete work Concrete strength and placement in manholes to date is satisfactory. Risers are properly supported. Pipe encasements, where required, are satisfactory. No structural concrete has yet been placed on pump stations for foundation slab. Pump station walls are pre-cast units.

Earth work Satisfactory. Trenches are properly braced by trench boxes and/or shoring. Backfill is tamped by hand wackers. Compaction test results to date are satisfactory. Pressure-jet water compaction is used on Township roads, and no settlement problems have resulted to date.

Electrical work None to date (pump stations).

Form and Frame work None to date. Pre-packaged pump stations will be utilized on Contract 5. Only foundation slab will require formwork.

Masonry work Only work to date has been on metering station along Commerce Street. Block is properly set and joints raked and accurate. Finish satisfactory. Pre-fabricated metal buildings will be used at pump stations in lieu of masonry block structures.



Mechanical work None to date (pump stations). Temporary metering equipment has been installed at boro tie-in on Commerce Street

Pipeline construction Pipes are properly bedded and true to line and grade. Air test results are properly documented and up-to-date. Only two sections to date have failed and contractor has corrected both. No hydrostatic pressure tests have yet been run on force mains.

Paving and street repair See Comments in Section VII.

3. Project Sign Two, erected at field office.
4. Federal Wage Rates Posted Yes, at contractors' field trailers.
5. General Project Maintenance and Site Conditions General site conditions are satisfactory. Sites are policed daily and trenches closed up or barricaded. Water trucks are used for mud and dust control. Traffic on State Roads is protected by signing, pylons, and flagmen.

Section VI. Summary of Significant Construction or Management Deficiencies.

None.



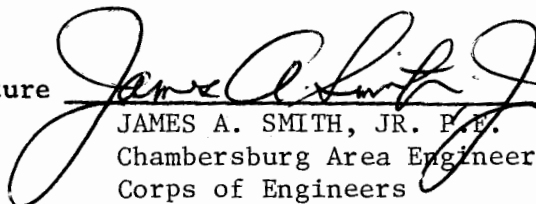
Section VII. Brief abstract of the interim inspection.

1. Inspection conducted at Engineer's Field Trailer and Main Office. A job conference was also attended this date to review progress and discuss problems at site. These conferences are held with contractors on a monthly basis.
2. The construction of pipelines is presently ahead of schedule and no problems are anticipated. Construction of pump stations is behind schedule due to delays in the shipment of pre-cast, pre-packaged station components. Contractor has submitted a revised schedule for this work and anticipates completion within the required contract time. Shipment of the station components is now schedule for February 1980.
3. Ten Change Orders are in various stages of processing, with eight approved by the Authority and five approved by Farmers Home Administration and submitted to PennDER for review. Review time required by FmHA is still very long and improvements are not presently foreseen in this matter.
4. The Grant Payment Schedule, as revised on 21 May 1979, is accurate and properly reflects contractor's projected earnings.
5. Certified payrolls are on file and reviewed by the Engineer for the Grantee. A check of payrolls for the period 1 October 1979 thru 28 October 1979 revealed no discrepancies.
6. The project at the present time is experiencing problems in two areas involving road restoration:

a. PennDOT has recently revised its requirements for the restoration of State Highways torn-up by the sewage construction. The new specifications call for full and partial overlays is in excess of the normal trench width restoration anticipated (and approved by PennDOT) in the contract bid documents. To complete paving in conformance with these new regulations, the Engineer would have to

(Continued)

Inspector's Signature


JAMES A. SMITH, JR. P.E.
Chambersburg Area Engineer
Corps of Engineers

Date 5 December 1979

4 JAN 1980

Section VII. Brief abstract of the interim inspection (Continued).

issue change orders to cover the increased cost.

b. Township roads have also been severely damaged by sewer construction, including roads used as access by heavy construction equipment. Change orders would be required to cover full and partial overlays to restore these roads to original condition.

At the present time the Engineer, at the direction of the Authority, is initiating a study of all state and township roads to determine restoration requirements and costs resulting from sewage construction.

Permanent road restoration has been officially delayed until the Spring of 1980 (Attachments No. 2 and 3). The results of the road survey will be used to initiate change orders to cover the restoration work and also apply for additional EPA Grant Funding. Requirements for additional funding were set forth in a memorandum from Mrs. Barbara D'Angelo, EPA, Region III, dated 15 October 1979 to the Engineer (Attachment No. 4).

Arrowood promptly notified PennDER, Harrisburg, of EPA's policy on full width road restoration and their intent to pursue additional grant funding (Attachment No. 5).

A summary account from Chambersburg Public Opinion is included as Attachments No. 6 and 7.

7. Overall project management and resident inspection at the time of this inspection is satisfactory.

